

ORIGINAL

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PERCE



0000075233

Arizona Corporation Commission
DAVID SABER
Director, Safety Division

RECEIVED **ARIZONA CORPORATION COMMISSION** **DOCKETED**

2007 AUG -7 P 4: 38

AUG 07 2007

AZ CORP COMMISSION
DOCKET CONTROL

Staff Memorandum

DOCKETED BY

To: THE COMMISSION

DOCKET NO. RR-03639A-07-0398

From: Safety Division

Date: August 7, 2007

RE: IN THE MATTER OF THE APPLICATION OF THE TOWN OF GILBERT,
ARIZONA TO UPGRADE A CROSSING OF THE UNION PACIFIC
RAILROAD AT THE INTERSECTION OF POWER AND PECOS ROADS IN
MARICOPA COUNTY, ARIZONA, AAR/DOT NO. 741-833-U.

On June 29, 2007, the Town of Gilbert, Arizona ("Town") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to upgrade an existing crossing at the intersection of Power and Pecos Roads in the town of Gilbert in Maricopa County, Arizona at AAR/DOT No. 741-833-U. Commission Safety Division Staff ("Staff") issued data requests and those data requests and the County's responses (without attachments), are included as attachments to this memorandum.

The Town has jurisdiction over the intersection at Pecos and Power Roads where the Railroad tracks and the roadway meet at grade, at railroad mile post 934.5 on the Union Pacific's Phoenix Line. This crossing and its warning devices (flashing lights and gates) have been in place since 1974 when the crossing was first placed into service. Commission Rail Safety Section and The Federal Railroad Administration ("FRA") accident/incident records indicate one accident at this crossing. No injuries or fatalities have been reported.

The Town's filing in this application requests approval for the Union Pacific to install new 12' LED flashing lights and gates, cantilevers, and concrete crossing surface, to accommodate a road widening improvement project being done by the Town. The Town is widening the existing roadway section from two lanes to six lanes. The improvements are necessary to remedy an existing bottleneck at Pecos and Power for existing and future traffic volumes.

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



BRIAN C. MCNEIL
Executive Director

DAVID RABER
Director, Safety Division

ARIZONA CORPORATION COMMISSION

Several meetings were held between 2003 and 2005 where details of improving the existing crossing were discussed with representatives from the Town of Gilbert, Staff and the Railroad. As stated in the Town's application, it was decided that a grade separated crossing was unfeasible due to the skew of the Union Pacific's tracks across the intersection. If grade separation were required, the existing physical terrain would make construction of a temporary railroad track by-pass and a traffic detour very difficult. It was decided that the impact to the traveling public would be unacceptable if the Pecos and Power Road intersection were to be closed during the duration of the construction of a potential grade separated crossing.

However, the Final Alignment Study of Pecos Road provided to Staff with the Town's data responses show three alignment options that were considered, two of which were grade-separated. As stated in the study, each of the alignment alternatives is evaluated based on four criteria: roadway geometrics, utility impacts, property impacts, and overall cost.

Alignment Alternatives

Alignment 1 causes the least property impacts because it utilizes the existing right-of-way along the section line and it does not divide the Power Ranch Development. Alignment 3 causes the most property impacts because it severely divides the Power Ranch development and would eliminate a mini-storage facility on Power Road. Both Alignment 1 and 3 involve grade separation.

Alignment 2 has the preferred roadway geometrics. Alignment 2 impacts the existing utilities the least because it utilizes the existing at-grade railroad crossing and does not require a grade-separated crossing like Alignments 1 and 3.

Of the three alignment alternatives, Alignment 3 has the best roadway geometrics of any of the Pecos Road alternatives because it has the fewest curves and avoids an offset intersection used in Alignment 1. However, the grade change for the Union Pacific grade separation creates an undesirable Rittenhouse Road intersection location and limits access to adjoining parcels. In addition, the Rittenhouse Road alignment associated with Alignment 3 has several sets of sharp reverse curves.

The construction cost estimate for each alignment alternative was also evaluated. The estimates were developed from the cross sections, utility impacts, and property impacts described above. In addition, the estimates were broken out by jurisdiction. **The alignments had many distinguishing cost features, the key**

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



ARIZONA CORPORATION COMMISSION

BRIAN C. MCNEIL
Executive Director

DAVID RABER
Director, Safety Division

cost difference is the new bridge required for the railroad tracks. The least expensive alignment alternative is alignment 2.

In evaluating each of the above described alignment alternatives, it is important to identify those critical characteristics that may eliminate an alignment from further consideration. For Pecos Road, these critical characteristics would include offset intersections, a new grade-separation and Power Ranch impacts. Of the alignments evaluated, Alignment 2 best avoids the critical characteristics. Alignment 2 is the preferred alignment alternative. Therefore, for the above mentioned reasons, Alignment 2 was chosen, and the Town wishes to upgrade and widen the existing at-grade crossing at the location of Pecos and Power Roads rather than grade separate.

Construction of a grade separated crossing at this intersection is not currently in the Town Capitol Improvements Program. The Town has estimated that if they were to grade separate this crossing, it would be around \$22 million. Currently there are no plans to grade separate the crossing within the next 10 to 15 years.

Utilizing the Exposure Index (the product of daily road traffic and the daily number of trains as a simplified method or "quick check" to indicate the potential for a grade separation) described in the report Grade Separations – When Do We Separate? by Nicholson and Reed (this report was provided to the Commissioner's Offices on June 22, 2007), Staff has determined the following for this crossing:

Year	Average Daily Traffic	Average Daily Trains	Exposure Index
2006	26,818	7	187,726
2020	35,600	7	249,200

The authors of the above-referenced report state that, "when a predetermined value of the index is reached, further investigation is triggered. Examples of predetermined values range in one state from 15,000 for rural conditions to 30,000 for urban conditions, in another from 50,000 for roads on the state highway system to 100,000 for all other roads, and in a third, by speed (15,000 for rural conditions where roadway vehicle speeds are greater than 50 MPH)." The report further indicates that, "investigation described in this section has shown this method is quick, easy, and sufficiently accurate to represent an adequate initial or general screening tool to be used prior to proceeding with more detailed technical analysis."

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



ARIZONA CORPORATION COMMISSION

BRIAN C. MCNEIL
Executive Director

DAVID RABER
Director, Safety Division

Although Staff agrees that the Exposure Index should not be used as the sole decision-making tool for determining the appropriateness of a grade separation, Staff notes that the current Exposure Index of 187,726 warrants further investigation of grade separation of this crossing now or in the future by the Town.

Adjacent Properties

The property located at the north-west corner of the Power and Pecos crossing is zoned general commercial. The property located at the southwest corner of the intersection is zoned for a shopping center, while the property located at the northeast corner of the intersection is in the City of Mesa and is zoned industrial. Located at the southeast corner of the intersection is property within the Town of Queen Creek and is zoned commercial.

The nearest school to this crossing is Higley High School which is three-quarters of a mile away, located at the intersection of Recker and Pecos Roads. The Higley School District is the only district in the area that has buses traveling over this crossing. Information provided by the Town states that there are eleven bus trips a day with students across the Pecos and Power crossing, and an additional 32 bus trips with empty buses.

The closest hospital to this grade crossing is the Gilbert Emergency Hospital located at the south-west corner of Power Road and Galveston. The hospital is approximately two miles to the north of the crossing.

There are two alternate routes available that can be used if necessary to the west and east of this intersection. To the west is Recker Road, approximately three-quarters of a mile from the Pecos/Power intersection and to the east is Sossaman Road, approximately three-quarters of a mile from the intersection. Neither of these alternative routes is grade separated.

Traffic Data

Traffic data provided by the Town of Gilbert Public Works Department estimates the Average Daily Traffic ("ADT") for this crossing to be 26,818. This count was taken in 2006. Future projected traffic counts for the crossing are; for the year 2010 - 17,300 ADT, and for the year 2020 - 35,600 ADT. The Level of Service ("LOS") for this crossing as reported by the Town, is LOS F for both AM traffic and PM traffic. The proposed reconstructed intersection is expected to operate at a LOS C for the design year of 2018.

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



ARIZONA CORPORATION COMMISSION

BRIAN C. MCNEIL
Executive Director


DAVID RABER
Director, Safety Division

The American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets, 2004, states that the Level of Service characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be.

Data provided by the Railroad states that the number of trains per day at this intersection is between 6 and 8. There are no passenger trains that operate on this railroad line. The maximum allowable timetable speed for this location is 60 miles per hour.

The estimated cost for the at-grade crossing improvements is \$973,806.00 and is budgeted and being funded 100% by the Town's Fiscal Year 2006/2007 Capitol Improvements Program. The Railroad will maintain all railroad equipment after the project is finished, including the flashing lights, gate arms, cantilevers, and new concrete crossing surface.

Having reviewed all applicable data, Staff supports the improvements to the crossing at Pecos and Power, as presented by the Town of Gilbert's application. Taking into consideration the current Level of Service of "F" for the roadway user, any deviation causing further delay from the Town's current proposed plans would be detrimental to the public. Staff believes that the improvements are in the public's interest and are reasonable. However, Staff feels that the Town of Gilbert should re-address and consider grade separation of this crossing in the next five to ten years. Therefore, Staff recommends approval of the Town of Gilbert's application.


Brian H. Lehman
Railroad Supervisor
Safety Division

BHL: cbw

Originator: Chris B. Watson

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



BRIAN C. McNEIL
Executive Director

ARIZONA CORPORATION COMMISSION

July 16, 2007

Richard Allred, P.E.
Town Engineer
Town of Gilbert
50 East Civic Center Drive
Gilbert, Arizona 85292

Sent via U.S. Mail

Re: Staff's **First Set of Data Requests** to the Town of Gilbert
Docket No. RR-03639A-07-0398

Dear Mr. Allred:

Please treat this as Staff's **First Set of Data Requests** to the Town of Gilbert in the above-reference matter.

For purposes of this data request set, the words "Town of Gilbert," "Company," "you," and "your" refer to the Town of Gilbert and any representative, including every person and/or entity acting with, under the control of, or on behalf of the Town of Gilbert. For each answer, please identify by name, title, and address each person providing information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses.

Please respond within **twenty-one** calendar days of your receipt of the copy of this letter. However, if you require additional time, please let us know.

Please provide one hard copy as well as searchable PDF, DOC or EXCEL files (via email or electronic media) of the requested data directly to each of the following addressees via overnight delivery services to:

- (1) Chris Watson, Railroad Safety Inspector, Arizona Corporation Commission, 2200 North Central Avenue, Suite 300, Phoenix, Arizona 85004.
- (2) Charles H. Hains, Attorney, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007.

Sincerely,

A handwritten signature of Charles H. Hains, written in black ink, with a long horizontal flourish extending to the right.

Charles H. Hains
Attorney, Legal Division
(602) 542-3402

CHH:sab
Enclosure(s)
cc: Chris Watson

**ARIZONA CORPORATION COMMISSION
STAFF'S FIRST SET OF DATA REQUESTS TO
THE TOWN OF GILBERT
DOCKET NO. RR-03639A-07-0398
JULY 16, 2007**

*Subject: All information responses should **ONLY** be provided in searchable PDF, DOC or EXCEL files via email or electronic media.*

- CW 1.1 Provide Average Daily Traffic Counts for this location.
- CW 1.2 Provide Annual Average Traffic Counts.
- CW 1.3 Please describe the current Level of Service (LOS) at this intersection, and what the LOS will be with the proposed alterations to the intersection.
- CW 1.4 Provide a ten year traffic projection for this area.
- CW 1.5 Provide distances in miles to the next public crossing on either side of the proposed project location. Are either of these grade separations?
- CW 1.6 How and why was grade separation not decided on at this time? Please provide any studies that were done to support these answers.
- CW 1.7 If this crossing was grade separated, provide a cost estimate of the project.
- CW 1.8 In your application to the Commission, you stated that "It was decided that the impact to the Traveling Public would be unacceptable if the Pecos and Power Road intersection were to be closed during the duration of the construction of a potential grade separated crossing." Please provide information as to how this decision was arrived upon.
- CW 1.9 Please describe what the surrounding areas are zoned for near this intersection. i.e. Are there going to be new housing developments, industrial parks etc.
- CW 1.10 Were other alignments considered for the Pecos/Rittenhouse realignment?
- CW 1.11 Please request the following information from the railroad: number of daily train movements through the crossing, speed of the trains, and the type of movements being made (i.e. thru freight or switching).
- CW 1.12 Please provide the Design Concept Report (DCR) for this project.
- CW 1.13 Please provide total costs to the Town of Gilbert for the grade crossing improvement. Also please provide a breakdown of how the costs are allocated and where the monies for the project are coming from.

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



BRIAN C. McNEIL
Executive Director

ARIZONA CORPORATION COMMISSION

July 19, 2007

Richard Allred, P.E.
Town Engineer
Town of Gilbert
50 East Civic Center Drive
Gilbert, Arizona 85292

Sent via U.S. Mail

Re: Staff's **Second** Set of Data Requests to the Town of Gilbert
Docket No. RR-03639A-07-0398

Dear Mr. Allred:

Please treat this as Staff's **Second** Set of Data Requests to the Town of Gilbert in the above-reference matter.

For purposes of this data request set, the words "Town of Gilbert," "Company," "you," and "your" refer to the Town of Gilbert and any representative, including every person and/or entity acting with, under the control of, or on behalf of the Town of Gilbert. For each answer, please identify by name, title, and address each person providing information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses.

Please respond within **seventeen** calendar days of your receipt of the copy of this letter. However, if you require additional time, please let us know.

Please provide one hard copy as well as searchable PDF, DOC or EXCEL files (via email or electronic media) of the requested data directly to each of the following addressees via overnight delivery services to:

- (1) Chris Watson, Railroad Safety Inspector, Arizona Corporation Commission, 2200 North Central Avenue, Suite 300, Phoenix, Arizona 85004.
- (2) Charles H. Hains, Attorney, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007.

Sincerely,

A handwritten signature in dark ink, appearing to read "Charles H. Hains", with a long horizontal flourish extending to the right.

Charles H. Hains
Attorney, Legal Division
(602) 542-3402

CHH:sab
Enclosure(s)
cc: Chris Watson

**ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
THE TOWN OF GILBERT
DOCKET NO. RR-03639A-07-0398
JULY 19, 2007**

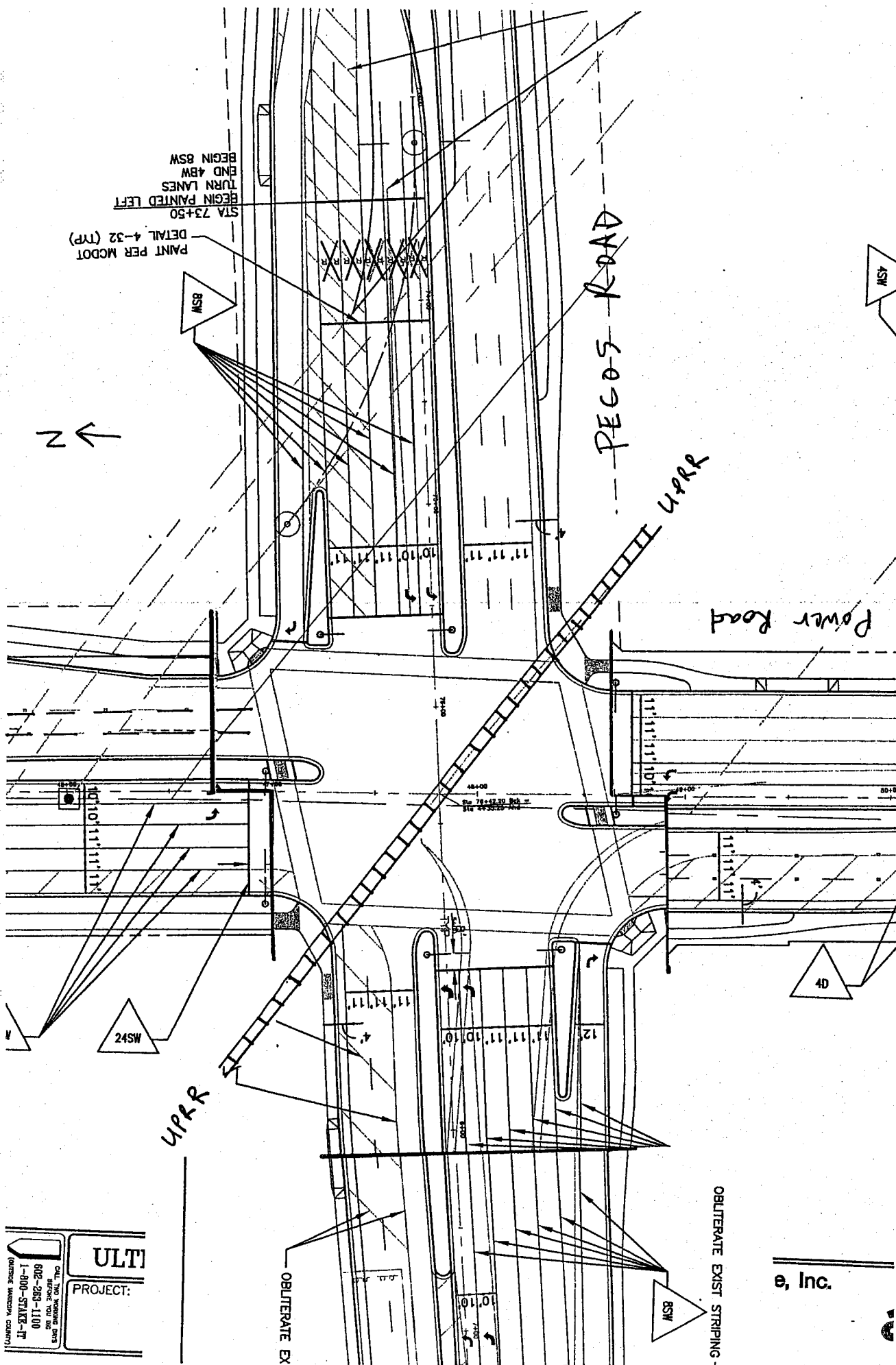
Subject: All information responses should ONLY be provided in searchable PDF, DOC or EXCEL files via email or electronic media.

- CW 2.1 Please provide the names and locations of all schools (elementary, junior high and high school) within the area of the crossing.
- CW 2.2 Please provide school bus route information concerning the crossing, including the number of times a day a school bus crosses this crossing.
- CW 2.3 Please provide information about any hospitals in the area and whether the crossing is used extensively by emergency service vehicles.
- CW 2.4 Please provide any long term traffic studies that have been done for the area.
- CW 2.5 Does the town have a long range goal to grade separate this crossing in the future?
i.e. in ten to fifteen years.

ACC STAFF DATA REQUESTS

- 1.1 Average daily traffic Counts for Power and Pecos Roads.
2006 Power Road ADT at Pecos/ Rittenhouse 26818.
2006 Rittenhouse ADT east of Power 15620.
- 1.2 Do not have average annual traffic counts.
- 1.3 Current level of service of the Power Pecos intersection was calculated as "F" for AM traffic and "F" for PM traffic. The proposed reconstructed intersection is expected to operate at a LOS of "C" for the design year of 2018.
- 1.4 The future traffic projections for this intersection are:
Power Road year 2010 - ADT 17,300 and for year 2020 - ADT 35,600.
Pecos/Rittenhouse year 2010 - ADT 16,900 and for year 2020 - ADT 34,700.
- 1.5 The distance to the next public crossing to the north is Recker Road approximately 4,400 feet and to the south is Sossaman approximately 4,500 feet. Both crossings are at grade.
- 1.6 Grade separation was not considered since this crossing already exists at grade. It was decided to use the existing at grade crossing and widen it to accommodate the increase in traffic. The Pecos Road realignment study looked at alternative alignments but did not propose a grade separation.
- 1.7 If this crossing was to be grade separated the estimated cost is \$22 Million.
- 1.8 The concept of Grade separation was not discussed by the Town of Gilbert, the Arizona Corporation Commission or the Union Pacific Railroad at any of the on-site meetings in 2003-2005. A project to grade separate the intersection would take approximately 3-4 years to design and construct and would be a major congestion point for the traveling public.
- 1.9 The property at the NWC is zoned General Commercial. The property at the SWC is zoned Shopping Center. The property at the NEC is in the City of Mesa and is zoned Industrial. The property at the SEC is in the Town of Queen Creek and is zoned Commercial.
- 1.10 Three different alignments were considered for the alignment of Pecos Road See attached Final Alignment Study - Pecos Road from Recker Road to Sossaman Road.
- 1.11 UPRR information:
Maximum train speed: 60mph
Thru Freight: 6 trains per day
Switching Moves: 2 per day
- 1.12 See attached Final Alignment Study - Pecos Road from Recker Road to Sossaman Road.
- 1.13 The total cost of the at grade crossing \$4.25 Million and is budgeted and funded in the Towns FY 2006/ 2007 Capital Improvements Program. See Attached break down for Town of Gilbert Project ST085.

- 2.1 The closest school to the crossing is Higley High School at the NEC of Recker and Pecos approximately 4000 feet west on Pecos Road.
- 2.2 The only school District with bus traffic through the intersection is the Higley School District. 11 buses travel through the intersection daily with students. An additional 32 occurrences that buses deadhead empty through the intersection.
- 2.3 The closest Hospital is at the Gilbert Emergency Hospital located at the SWC of Power and Galveston. Approximately 2.0 miles to the north. It is unknown if the intersection is used extensively for emergency services.
- 2.4 Construction of a grade separated crossing at this intersection is not currently in the Town Capital Improvements Program. Currently there are no plans to grade separate the crossing within the next 10-15 years.



	PROJECT:
	602-263-1100 1-800-STAKE-IT <small>OUTSIDE MARCH, CALIFORNIA</small>
	ULI 602-263-1100 1-800-STAKE-IT <small>OUTSIDE MARCH, CALIFORNIA</small>

e, Inc.

OBLITERATE EXIST STRIPING-